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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,619	05/24/2002	Jean-Pierre Le Pesant	01213	2952

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EXAMINER

FREAY, CHARLES GRANT

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/926,619

Applicant(s)

LE PESANT ET AL.

Examiner

Charles G Freay

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: on page 14 line 18 "4" should be "24".

Appropriate correction is required.

### ***Claim Objections***

Claims 1, 2, 9, 13, 24 and 25 are objected to because of the following informalities: In claim 1 line 19 "apply" should be "applies"; in claim 2 line 3 it is unclear if the material after "in particular" is only for example or is intended to limit the claim; in claim 9 line 4 there is no antecedent basis for "its respective substrate"; in claim 13 line 3 "SO" should be "so"; in claim 25 lines 3 and 4 it is unclear if the reservoir should be "a cartridge or the like" and in claim 25 lines 11 and 12 it is unclear if a rechargeable battery is limiting to the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 1 is vague and indefinite because it is unclear what material is being mixed, or if it is a second fluid in a second flow path, by the requirement for mixing in line 22.

Claims 15-18 are vague and indefinite because they use language which is different than the language used in the specification and because of this it is unclear which of the disclosed electrode pairs are being referred to be the various recitations in the claims. For example in the specification the pair (6a,6b) is referred to as a throttle, the pair (8a,8b) is referred to as a drop forming devise. The claims refer to an extractor and a liquid retaining zone. As the claims read the extractor would seem to be the electrode pair (8) and the retainer zone would be electrode pair (10). But the extractor is also set forth as being adjacent to the reservoir which would suggest the electrode pair (6). It is unclear which of the disclosed elements are being referred to by the claims because of the use of multiple terms to refer to the various elements in the claims and the specification.

### ***Allowable Subject Matter***

Claims 1-26 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: the prior art neither discloses nor makes obvious a device for diffusing calibrated small drops of liquid comprising a series of pairs of close together surfaces, a means for applying an electric field between the pairs of surfaces in order to move liquid

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from one pair to the next by the application of a sequence of electric fields and where the series of pairs of close together surfaces defining at least one displacement path cooperate to store liquid, to form drops of liquid and to move the drops to an outlet.

The closest prior art is the references to Dahl (USPN 4,565,748) and Lee et al (USPN 6,146,103). These references disclose series of electrode pairs which pump a fluid through a conduit. The series of pairs of electrodes disclosed in these references do not, however, co-operate to store the liquid, to form drops of the liquid, and to move the liquid drops to an outlet.

### ***Conclusion***


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In addition to the Dahl and Lee et al reference discussed above the following references disclose pumps which act on a fluid by an electric or a magnetic field: Bowlus, Carlson et al, York et al and Tada.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G Freay whose telephone number is (703) 308-0639. The examiner can normally be reached on Monday through Friday 10:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on (703)308-2675. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0861.



Charles G Freay  
Primary Examiner  
Art Unit 3746

CGF  
September 29, 2003